



Sustainability in family business – A bibliometric study and a research agenda

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ABSTRACT

Sustainability is a relevant and established topic in the family business literature. However, family business scholars lack a comprehensive understanding about the different streams of research and the potential new areas for exploration on this topic. This limitation is a significant hindrance to the advancement of both theory and practice in the area. In this study, we provide an overview of the past, present, and future of research in the field of sustainability in family business. We use a systematic review of the literature by combining different bibliometric techniques. In the process, we provide a mapping of various themes alluding to sustainability in family businesses for a better understanding of the growth of the literature related to the topic, as well as its evolution. Our findings indicate that the extant literature on this topic falls into four different clusters: family business capital, family business strategy, family business social responsibility, and family business succession. We provide a research agenda for future studies after examining each research cluster.

1. Introduction

Sustainability has become an important consideration in all aspects of human and organizational routines. The concept has attracted the attention of business leaders, policy makers, and highly respected organizations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO). Sustainability is the primary theme of UNESCO's Sustainable Development Goals (SDG) for the World with organizations playing a critical role in it.

In organizations, sustainability is an essential source of competitive advantage to survive and create value within the circular economic paradigm (Ferasso et al., 2020; Pieroni et al., 2019; Zellweger et al., 2013). Over the last few decades, sustainability has also emerged as a relevant and established subject in the family business literature (e.g., Bernhard et al., 2020; Le Breton-Miller and Miller, 2016; Olsen et al., 2013; Rovelli et al., 2021). This growing body of research sheds light on the key and specific mechanisms and processes by which family businesses implement and achieve sustainable goals and practices. Scholars

and practitioners have come to recognize this rapidly growing body of literature (e.g. Fehre and Weber, 2019).

However, to date prior research lacks a clear and comprehensive understanding of the sustainability themes that scholars examined and potential new areas available for further exploration. This void in our understanding of such an important issue has the potential to limit the advancement of the field and stunt the development of critical issues that are important for both theory and practice.

In the family business literature, limited attempts to map sustainability-focused literature suffer from many limitations (Gast et al., 2018; Bichler et al., 2021). For example, P.D. Olson et al. (2003) sought to identify strategies that families can use to increase the success and sustainability of their businesses and their families. Oudah et al. (2018) developed a Systemic Literature Review (SLR) with the objective of identifying and prioritizing various success factors linked to the sustainability of large and medium-sized family businesses in the United Arab Emirates. Ahn et al. (2021) intended to carry out an SLR on the governance of family businesses and their importance for sustainable

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development. However, the authors focused their study only on the way in which corporate governance involvement is interconnected. Thus, to date there is a lack of a systematic literature review that effectively shows the evolution and levels of analysis in the synthesis of knowledge in this important and comprehensive domain: sustainability in family business.

With regard to theory, the current literature lacks guidance for family business scholars seeking to identify the key topics, pieces of evidence, and main contradictions within the domain. This makes it challenging and time-consuming for scholars to address the future research needs and to contribute effectively to the literature. Referring to practice, top managers and advisors acknowledge that family businesses can achieve tangible and intangible benefits via a well-developed sustainability plan (Mason, 2011). A clear and holistic understanding of how sustainability takes place for such organizations is a crucial priority for practitioners to create and capture value.

In the present study, our goal is to give an overview of the past, present, and future of research in sustainability in family businesses, through a systematic review of the literature, by combining different bibliometric techniques. Furthermore, we provide a mapping of the themes alluding to sustainability in family businesses for a better understanding of the literature related to the topic and its evolution. Therefore, in the present article our research question is: how is sustainability defined in the field of family business?

In this study we use a combination of bibliometric techniques such as citations, co-citations, and social network analysis to analyze the scientific field of sustainability in family businesses and to answer our research question. Bibliometric analysis is a common tool for analyzing the existing literature on a global scale (Mutschke et al., 2011). The technique involves the application of quantitative and statistical analysis to publications such as articles and their citations assessing the state of the literature. This technique also provides data on all activities of a scientific field, and the summaries of these data offer a broad perspective on the activities and impacts of research, especially researchers, journals, universities, and countries (Hawkins, 1977; Osareh, 1996; Thomson Reuters, 2008). This method is also often applied in the field of family business to systematize prior studies and suggest new paths of research for scholars (e.g. Calabrò et al., 2019).

Our bibliometric study of sustainability issues in family business is the first of its kind in the literature. Our findings indicate essential prior research about this topic (in total, 34 articles), which falls into four different clusters: family business capital, family business strategy, family business social responsibility and family business succession. Future research, stemming from the current clusters, should focus on additional research areas, questions, and topics, still scarcely explored but potentially relevant for managing sustainability-related issues in family businesses. Some future research areas to investigate should relate to, for instance, the role of digital technologies in reaching sustainability, the introduction of new sustainability-driven business models, the new approaches for stakeholder management, and inter-firm collaboration between sustainable family business and other companies.

The article is structured as follows. We begin by describing the research methodology to build our sample of articles on sustainability in family business published in the period 2003–2019. In Section 3, we provide an overview of study results (descriptive analysis, co-citations, cluster analysis). In Section 4, we illustrate the dominant approaches in the literature and describe in detail the four above-mentioned clusters. In the final Section 5, we report a research agenda for future studies and offer study limitations.

2. Research methodology

2.1. Method

We chose this rising methodology within management, innovation,

and entrepreneurship literature (Mas-Tur et al., 2020; Kraus et al., 2020) following the definition of Paul and Criado (2020). According to Paul and Criado (2020) a bibliometric review analyzes an extensive amount of published research by using statistical tools to figure out trends and citations and/or co-citations of a particular theme by year, country, author, journal, method, theory, and research problem. A graphical bibliometric review can be developed using Viewer software programs currently available, such as VoS (Visualization of Similarities), and widely used for bibliometric review in diverse subject areas.

Initially in the study, we performed a descriptive data analysis to address our research question. Subsequently, following White and McCain (White and McCain, 1998) we conducted a co-citation analysis to analyze the most relevant publications on sustainability in family businesses. In our sample of studies, we extracted the number of times that two documents or authors on sustainability in family businesses are cited together in the resulting universe of publications. We analyzed the extracted data to obtain relationships in the citations and map the dominant approaches in research on the article's theme, sustainability in family businesses.

We used a two-dimensional graph for the visual mapping of the articles. We utilized the multidimensional scaling analysis to observe the links of co-citations between the articles for the graph. In this graphical scaling, the points next to the origin of the references represent articles with connections to articles with different approaches and a very heterogeneous set of citations. After the multidimensional scaling, we utilized a hierarchical cluster analysis to group related articles into distinct sets, using the graph prepared through the multidimensional scaling for the groups' exposure.

Finally, we performed a factorial analysis, using the Principal Components Analysis with Varimax rotation, to obtain additional information regarding the existing research on sustainability in family businesses. This allowed us to identify articles sharing common components, along with articles contributing a higher weight for each of the emerging factors.

2.2. Data

We collected data on citations and co-quotes from the Science Citation Index Expanded (SCI-Expanded), Social Science Citation Index (SSCI), Arts & Humanities Citation Index (A&HCI), and Emerging Sources Citation Index (ESCI); all these online databases are part of Clarivate Analytics' Web of Science™ Core Collection. These sources contain thousands of academic publications and bibliographic information on authors, affiliations, and citations. We extracted the data from the Web of Science Core Collection databases on articles published in English using the following search criteria: TOPIC: ("Famil* Business*" OR "Famil* firm*" OR "family-owned business*") AND TOPIC: ("sustainab*") (TOPIC corresponds to the title, keywords, or abstract fields of the article). As we are in the year 2020, we limited our search to articles

Table 1
Summary of Articles.

Description	Results
Documents	161
Sources (Journals, Books, etc.)	89
Keywords Plus (ID)	477
Author's Keywords (DE)	522
Period	2003 - 2019
Average citations per document	19.6
Authors	384
Author Appearances	429
Authors of single-authored documents	27
Authors of multi-authored documents	357
Single-authored documents	28
Documents per Author	0.419
Authors per Document	2.39
Co-Authors per Documents	2.66

published up to last year (2019). The search resulted in a total of 161 articles. We provide a summary of the search results in Table 1.

The 161 articles, published between 2003 (three articles) and 2019 (40 articles), had a total of 3158 citations and had an average of 19.6 citations per article.

3. Results

3.1. Descriptive analysis

The evolution of published articles and citations each year on sustainability in family businesses is illustrated in Fig. 1. The field, which emerged in 2003, experienced almost no growth in publications until 2009. After 2009 and up to 2014, the growth in publications was inconsistent. However, there has been a sustained growth in the number of published articles since 2014. The average publication year of an article is 2016, reflecting a young, recent, and expanding scientific domain. There has been an exponential growth in citations per year in recent years, with 193 citations in 2016 and 645 in 2019.

The top five articles with the highest number of citations are:

- 1 Le Breton-Miller and Miller, 2006: 336 citations; 22.4 citations per year
- 2 Yuan et al., 2007: 254 citations; 18.1 citations per year
- 3 P. Olson et al., 2003: 233 citations; 12.9 citations per year
- 4 Zellweger et al., 2013: 171 citations; 21.4 citations per year
- 5 Danes et al., 2009: 151 citations; 12.6 citations per year

Fig. 2 lists ten journals with the highest number of published articles and the highest number of citations. The journals with the most publications are *Sustainability* (21 articles), *Business Strategy and the Environment* (eight articles), and *Journal of Family Business Management* (six articles). The journals with the highest number of citations are *Entrepreneurship Theory and Practice* (545 citations), *Family Business Review* (286 citations), *Trends in Plant Science* (254 citations) and *Journal of Business Venturing* (233 citations).

As data collection resulted in 161 articles, it was indispensable to establish a criterion for the definition of the articles that constitute the basis of analysis. According to the criterion of relevance, which should delimit the set of articles considering that the inclusion of a high number of references contributes to an enrichment of the analysis, the selected articles had at least 20 citations out of a total of 34 articles (Fig. 3).

The distribution of these 34 articles per journal reveals *Family*

Business Review as the publisher of the largest number of articles (four articles) with *Entrepreneurship Theory and Practice*, *Journal of Family Business Strategy*, and *Journal of Small Business Management* jointly sharing second place with three articles each. As for citations, the journals *Entrepreneurship Theory and Practice* (539 citations), *Family Business Review* (271 citations), and *Trends in Plant Science* (254 citations) had the highest number of citations.

3.2. Analysis of co-citations: multidimensional scaling, cluster analysis, and factorial analysis

As the bibliometric method involved analysis of co-citations for identifying the most relevant publications on sustainability in family businesses, we built a co-quotes matrix based on the number of times two documents or authors dealing with sustainability in family businesses are cited together in the universe of publications. This helped us to obtain relationships in the quotes and map the dominant approaches in the research on the published articles' theme.

We eliminated nine articles after the construction of the matrix (Arcese et al., 2017; Dangelico, 2017; Hou, 2019; Komnitsas and Zaharaki, 2012; Laasch, 2018; Le Breton-Miller and Miller, 2006; Shrimali et al., 2011; Villanueva-Alvaro et al., 2017; Yang et al., 2016) due to the non-existence of co-citations with the remaining 33 articles or those sharing only one co-citation with an article. For the subsequent analysis of co-citations, we used 25 articles.

Multidimensional scaling (MDS) allowed the generation of a map to analyze the relationship between the articles, identifying the dimensions that best explain the similarities and differences between them. Later, we employed a cluster analysis that allowed us to obtain homogeneous groups of articles. Finally, we used factor analysis to identify articles constituting each factor along with the degree of contribution of each article, through factor loads, to the underlying factor.

Fig. 4 presents the two-dimensional map of articles obtained through multidimensional analysis using the data from the co-citation matrix and the ALSCAL routines of the IBM SPSS 26.0 statistical program for Windows. The adjustment indexes (Kruskal's Stress=0.024 and RSQ=0.97) presented values indicating that the mapping presents an excellent approximation to reality.

Although the axes' construction is based on dimensional scaling, the articles' position on the map suggests a meaning for the axes.

The cluster analysis based on Ward's hierarchical method determined the grouping of the articles that appear in the multidimensional scaling graph. By grouping articles in the previous figure, we follow the

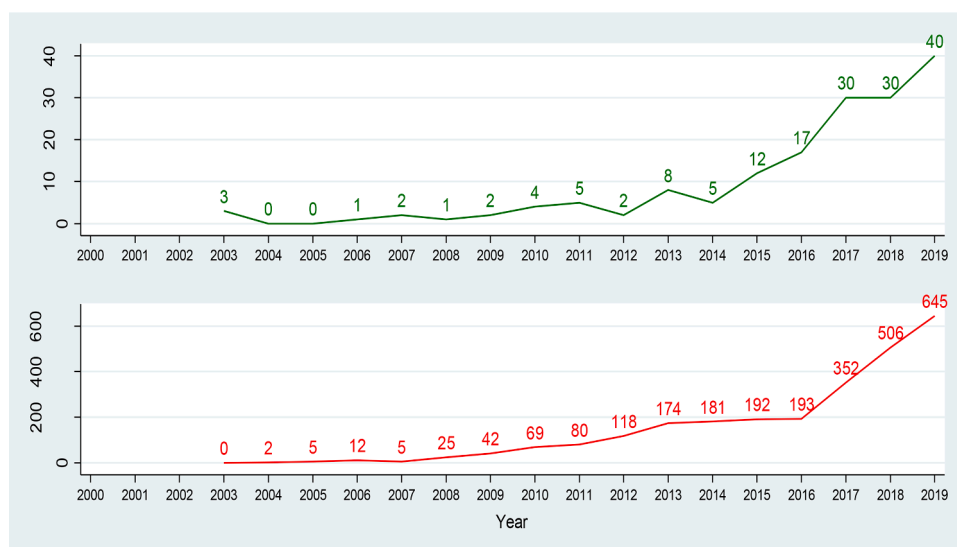


Fig. 1. Number of articles and citations by year.

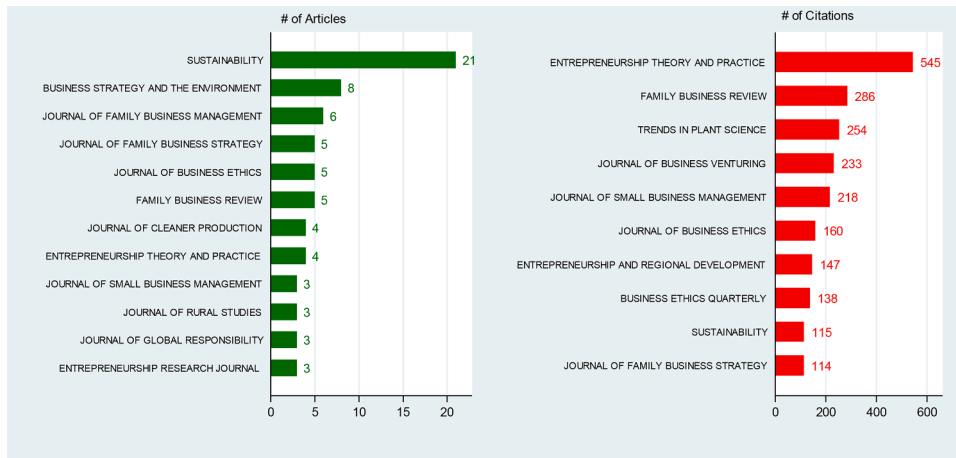


Fig. 2. Distribution of articles and total citations by journal.

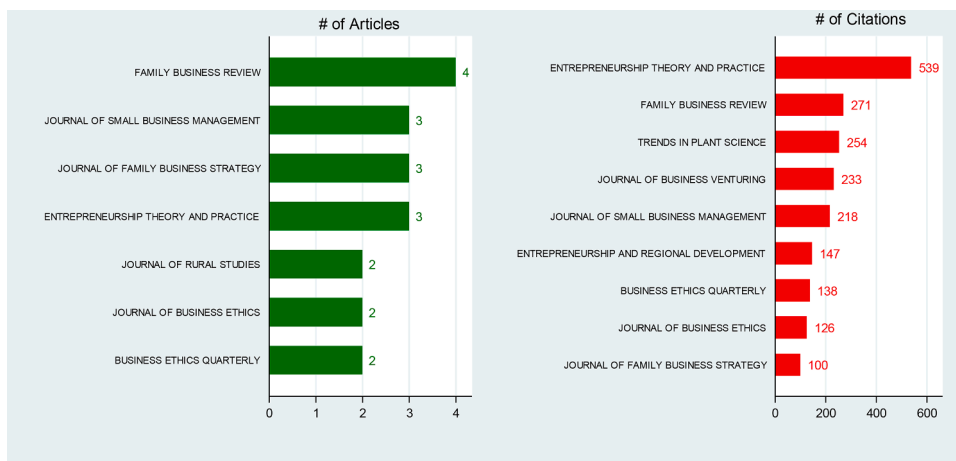


Fig. 3. Distribution of articles and citations by journal (100 articles included in analysis).

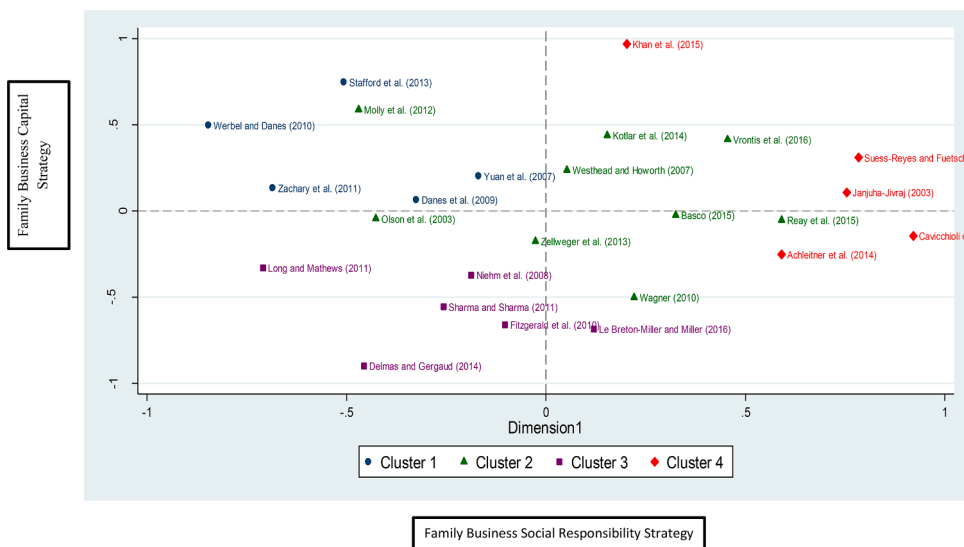


Fig. 4. Multidimensional Scaling and Cluster Analysis.

classification of dimension 1: Family Business Social Responsibility (cluster 2 and 3) and dimension 2: Family Business Capital Strategy.

Table 2 illustrates the articles included in each group. In each cluster,

the articles are ordered in a descending order of number of citations.

The factor analysis aims to identify which articles constitute each factor and discover the influence of each on the respective concurrent

Table 2
Articles used in Co-citation Analysis.

Articles	Cluster
Yuan et al. (2007)	Family Business Capital
Danes et al. (2009)	
Zachary et al. (2011)	
Werbel and Danes (2010)	
Stafford et al. (2013)	
P.D. Olson et al. (2003)	
Zellweger et al. (2013)	
Westhead and Howorth (2007)	
Vrontis et al. (2016)	
Wagner (2010)	
Kotlar et al. (2014)	Family Business Strategy
Basco (2015)	
Molly et al. (2012)	
Reay et al. (2015)	
Niehm et al. (2008)	
Sharma and Sharma (2011)	
Fitzgerald et al. (2010)	
Long and Mathews (2011)	
Le Breton-Miller and Miller (2016)	
Delmas and Gergaud (2014)	
Achleitner et al. (2014)	Family Business Social Responsibility
Janjuha-Jivraj (2003)	
Suess-Reyes and Fuetsch (2016)	
Khan et al. (2015)	
Cavicchioli et al. (2018)	
	Family Business Succession

approaches through factorial weight. Following the example of previous published works, we performed the analysis with Varimax rotation. The co-citation matrix provided the data for the analysis.

In factor analysis, we only considered published articles when its factorial weight is greater than or equal to 0.3. We assumed that the work has a very relevant contribution in the corresponding paradigm if it has a factorial load greater than or equal to 0.5.

Table 3 presents the results of factor analysis. Based on the Scree Plot there is evidence of four factors that explain 48.5% of the variance. Part of the references has a factorial load greater than 0.7, corroborating the importance of these articles within the paradigms associated with them. It is also observed that some of the articles have a factorial load higher than 0.3 in more than one factor and can be considered mediators between paradigms and potential links that have been formed between

Table 3
Factor Analysis (rotated factor loadings).

Article	Family Business Social Responsibility	Family Capital	Family Business Strategy	Family Business Succession	Cluster
Niehm et al. (2008)	0.801	0.122	-0.003	0.084	3
Fitzgerald et al. (2010)	0.797	0.030	-0.018	0.024	3
Delmas and Gergaud (2014)	0.735	-0.241	0.074	-0.184	3
Sharma and Sharma (2011)	0.721	-0.229	0.170	-0.142	3
Le Breton-Miller and Miller (2016)	0.650	-0.134	-0.027	0.424	3
Long and Mathews (2011)	0.370	-0.045	0.336	-0.283	3
Danes et al. (2009)	0.071	0.836	0.028	0.058	1
Werbel and Danes (2010)	-0.074	0.811	-0.056	-0.180	1
Yuan et al. (2007)	-0.057	0.719	0.034	0.035	1
Stafford et al. (2013)	-0.270	0.525	0.217	-0.039	1
Wagner (2010)	0.097	0.363	0.346	-0.209	2
Zachary et al. (2011)	0.322	0.347	0.045	0.303	1
Kotlar et al. (2014)	-0.312	-0.221	0.622	-0.040	2
Zellweger et al. (2013)	0.103	-0.246	0.551	0.216	2
Westhead and Howorth (2007)	-0.232	-0.120	0.517	0.200	2
Molly et al. (2012)	-0.198	0.031	0.457	-0.103	2
Basco (2015)	-0.084	0.006	0.814	0.149	2
Reay et al. (2015)	-0.104	-0.002	0.783	-0.085	2
Cavicchioli et al. (2018)	-0.204	-0.192	0.107	0.643	4
Suess-Reyes and Fuetsch (2016)	-0.232	-0.152	0.096	0.633	4
Achleitner et al. (2014)	-0.165	-0.263	0.095	0.487	4
Khan et al. (2015)	-0.254	-0.155	0.129	0.470	4
Janjuha-Jivraj (2003)	-0.149	-0.131	-0.245	0.411	4
P.D. Olson et al. (2003)	-0.166	-0.022	0.724	-0.119	2
Vrontis et al. (2016)	-0.162	-0.118	0.578	0.048	2

paradigms.

Based on the results of multidimensional scaling, cluster analysis, and factorial analysis, we identified four approaches (thematic groups); however, some of them have a mutual relationship

In factor 1, we find the authors of cluster 3: Family Business Social Responsibility. We found that the authors Niehm et al. (2008) and Fitzgerald et al. (2010) play a central role, verified by their weight in the factor, thus demonstrating their importance for the respective approach. Long and Mathews (2011), for its transversality, also occupies a place in factor 3.

Factor 2 corresponds to cluster 1: Family Capital. In this factor, we verified that the articles with greater weight, corresponding to their importance to the respective approach, are: Danes et al. (2009) and Werbel and Danes (2010). Both published articles used the theory of sustainable family business for their analysis. Some articles lacked a clear suitability for a particular cluster. For example, Zachary et al. (2011), despite belonging to cluster 1 and not having a particularly relevant weight, is part of factors 1, 2, and 4. This is due to the research transversality that, although it is found in the Family Capital approach, also served as a support to the authors of the other approaches.

In factor 3, we find the authors present in cluster 2: Family Business Strategy. In this factor, we find that Basque et al. (2015) and Reay et al. (2015) have a considerable weight in the approach they represent. We can also note that in the case of articles belonging to cluster 2, they are not present in other factors.

In factor 4 are the authors of cluster 4: Family Business Succession. The authors Suess-Reyes and Fuetsch (2016) and Cavicchioli et al. (2018) stand out with more relevance for this approach.

4. Sustainability in family business: dominant approaches

4.1. Cluster 1: family business capital

Danes et al. (2009) presented a typology of family capital based on the sustainable family business theory. They documented their contribution to the short-term achievements and long-term sustainability of the companies. The authors defined family capital as total family resources composed of human, social, and financial capital. They found that family capital contributed significantly to the accomplishments and sustainability of the company.

Werbel and Danes (2010), also employed the sustainable family business theory to investigate the degree to which the spouse of an operator of a new business is a hinderance to its formation. The authors paid particular attention to the new business venture operators, as there is significant evidence that new business venture operators suffer more stress than individuals in other types of employment. The authors found that when a spouse suffers from work and family conflict, they reflect a restriction that creates a physiological strain. Moreover, a spouse's commitment to new business ventures can further exacerbate that same relationship. These results imply that, in the first place, the spouse is not inherently a resource or a restriction in creating new business ventures. The degree of marital work and family conflict tends to expand or restrict the resources of the new business venture operator's success.

Zachary et al. (2011) argued that, despite the importance of market orientation to both strategic management and marketing literature, little attention has been devoted to exploring how market orientation relates to family businesses and how these relationships differ from non-family businesses. The authors concluded that market orientation could serve as a fruitful perspective to understand better family business culture and identity and the impact of these family-based idiosyncrasies on business strategies and organizational outcomes. Yuan et al. (2007) reached conclusions similar to Zachary et al. (2011).

Stafford et al.'s (2013) research focused on effective strategies for dealing with the threat of natural disasters to the survival and long-term growth of family businesses. The authors attempted to analyze the mitigating effects of family adaptive capacity to natural disasters on the survival and growth of family businesses in the long term. The indicators of family adaptive capacity had more significant effects and greater effects on survival and growth than the characteristics of the business.

4.2. Cluster 2: family business strategy

P.D. Olson et al. (2003) wanted to identify strategies that families could use to increase the success of their business and the family. The authors found that reducing family tension, living in a family of two or three generations, reallocating sleep time, and hiring temporary help during troubled periods, increased financial performance. Owners who consider their businesses more successful tended to sleep less and hired more temporary help during hectic periods of the company. The company's assets, the age of the company, personnel management, the weekly hours of the owner in the company, family employees, and hiring temporary help were positively associated with increased achievements for the company and the family.

For Westhead and Howorth (2007), family businesses that can leverage business experience and knowledge can shape local economic development. Professionals concerned with promoting corporate sustainability need to be aware that family businesses cite contrasting goals, resource profiles, and requirements. Family businesses are not a homogeneous entity. Thus, the focus of support for different types of family businesses can allow professionals to meet their objectives of wealth creation and social inclusion.

Wagner (2010) analyzed the relationship between innovation, high social benefits, and corporate social performance, and the role that family businesses play in this relationship. The implicit potential of innovation to reconcile the aspects of corporate sustainability with financial performance justifies an extensive analysis of this link. Governments often support socially-beneficial innovation with various policy instruments, intending to increase international competitiveness while supporting sustainable development. The results have shown a moderating effect of family businesses on the link between innovation and high social benefits.

Molly et al. (2012) investigated whether intergenerational differences affect family businesses' capital structure and growth behavior. To this end, they integrated the financing and growth relationship and the concepts of internal and sustainable growth. The authors found that the capital structure is not directly influenced by the generation that is in

management but indirectly by the growth rate achieved. Furthermore, the results indicate that the next generation of companies grows more slowly because they tend to give up part of their growth instead of risking family control loss due to increased debt.

Zellweger et al. (2013) have developed a justification based on organizational identity to explain why family businesses engage in non-financial objectives. The authors showed that the visibility of the family in the company, the family's trans-generational sustainability intentions, and the company's capacity for family self-improvement, positively influence the importance of identity adjustment between family and company, and the family's concern for corporate reputation.

For Kotlar et al. (2014), investments in research and development can help to build sustainable competitive advantage and improve company performance. However, managers also recognize the difficulties associated with R & D management and the low chances of innovation programs' success. The authors concluded that the importance of profitability and control goals follow a sequential logic in family businesses.

According to Basque (2015), a vital issue for regional development studies is determining the exogenous and endogenous factors and processes in the territory that favor regional growth and sustainable development. Despite theoretical and empirical advances in understanding regional development mechanisms, one dimension has been neglected: family businesses. To address this gap, the author has linked family business literature and regional development, developing a theoretical model that tries to serve as a framework to interpret the potential role that family businesses play in regional development. The model utilizes the concept of regional familiness, suggesting that the insertion of family businesses in productive regional structures affects regional factors, regional processes, and regional proximity dimensions and, therefore, alters external economies of agglomeration and regional externalities.

For Reay et al. (2015), relations between family businesses and their institutional contexts are essential for family businesses' legitimacy and sustainability. However, how these relationships influence the company's behavior lacks a clear understanding. They analyzed how family, business, and community logics guide the company's behavior and how different combinations of logic lead companies to take measures that modify the field to support their legitimacy and sustainability.

Vrontis et al. (2016) analyzed how a strategy based on the combination of tradition and innovation can offer a competitive advantage to a medium-sized family business. The authors concluded that companies are characterized by a healthy combination of tradition and innovation regarding products and processes. Innovation and tradition are not opposites; on the contrary, combining the two was crucial to achieving and maintaining a sustainable competitive advantage.

4.3. Cluster 3: family business social responsibility

For Niehm et al. (2008), family-centered businesses may have unique prospects for socially-responsible behavior due to family involvement and their ties to the community. The authors explored the background and consequences of community social responsibility for family businesses operating in small and rural markets. The results indicate that three dimensions (community commitment, community support, and sense of community) are responsible for family business managers' community social responsibility. The company's size is significantly related to the ability of family businesses to give and receive community support. Furthermore, the community's commitment significantly explains the perceived performance of the family business, while community support explains the financial performance. The findings suggest that socially-responsible business behavior can indeed contribute to the sustainability of family businesses.

Fitzgerald et al. (2010) intended to study, in the light of the sustainable family business reality, the impact of family, business, and community factors on the socially-responsible processes of small family

businesses and investigate the influence of financial success and community attitudes on these processes. The results show that individuals with very positive attitudes toward their local communities are more likely to take leadership positions and make financial and technical contributions to the community. Business owners in economically vulnerable communities are willing to take more responsibility for filling leadership positions in the community and make substantial technical and financial contributions than those in less vulnerable communities.

For Long and Mathews (2011), the ubiquity of family-owned companies in economies worldwide suggests that investigating the nature of these companies' ethical structures is increasingly important. In this context, they used the approach of social exchange and the rule of reciprocity. The authors argue that the factors underlying this cohesion, direct versus indirect reciprocity, shape the unique attributes of family businesses, such as intentions of transgenerational sustainability, the pursuit of non-economic objectives, and strong interpersonal ties. The structures of exchange, represented by direct and indirect reciprocity, lead a family business and a non-family business to develop distinct ethical frameworks of reference.

Sharma and Sharma (2011) argue that, globally, family businesses are the dominant organizational form. Family involvement in business and unique family dynamics affects organizational strategy and performance. However, family control of business has rarely been adopted as a discriminatory variable in organizational and environmental research. Based on behavior theory, the authors developed a conceptual framework of the drivers of a proactive environmental strategy in family businesses. The authors also point out that family involvement in business influences attitudes, subjective norms, and the behavioral control perceived in a company.

For Delmas and Gergaud (2014), business sustainability was defined as meeting current needs while providing future generations with the ability to meet their own needs. However, few companies invest in practices aimed at sustainability. The authors studied how family ties with future generations through transgenerational control intention can be associated with adopting sustainable practices. They then concluded that relations with future generations are related to the adoption of sustainable certification.

Le Breton-Miller and Miller (2016) sought to link corporate governance, investment policies, competitive asymmetries, and sustainable capabilities. Conditions such as concentrated ownership, extended mandates, and deep business experience provide some family control for the company owners, discretion, incentive, knowledge, and finally the resources to invest deeply in the company's future. These long-term investments result from corporate governance conditions and generate competitive asymmetries - organizational qualities that are difficult for other companies to copy and, therefore, are linked to the value chain and create sustainable capabilities.

4.4. Cluster 4: family business succession

Janjuha-Jivraj (2003) studied informal networks supporting the British Asian business community. Ethnic communities have been crucial in facilitating their migrant members' economic development as they transition from refugees to citizens. The basis of this informal support is the notion of social capital offered to relatives who have arrived with finite resources. However, as successive generations become more integrated into the wider community, dependence on these resources tends to decrease. The authors have shown that subsequent Asian generations develop complex relationships in their attitudes and trust in their ethnic community.

Achleitner et al. (2014) studied the effects of family businesses on managing real results and the management of results by competence using socio-emotional wealth as a theoretical structure and considering the different implications of the management of real results and the management of results by competence family business

trans-generational sustainability. The authors verified that family companies are less involved in real results management and exhibit more policies in managing results by competence. Family businesses use results management activities strategically, avoiding those that inhibit the company's long-term value and select those that help families maintain transgenerational control.

Khan et al. (2015) argued that, despite the predominance of publicly-traded family businesses in developing economies, several previous investigations had given this relatively little attention, and the socioeconomic context of these countries has almost always been ignored. The authors contribute so that the accounting literature can provide empirical evidence of the effects of family control and ownership on auditing prices and an auditor's choice in a developing economy context.

According to Suess-Reyes and Fuetsch (2016), family farming is exposed to severe economic, political, social, and ecological changes. To enable intra-family succession and safeguard the farm's long-term survival, farming families are increasingly forced to seek innovative and sustainable market-oriented strategies.

Cavicchioli et al. (2018) found that succession on farms is a relevant issue, as it is related to rural and youth migration, sustainability, and the aging of the agricultural sector. Understanding the factors behind the willingness of potential successors to take control of the family business is crucial to the continuity of the farm.

5. Theoretical and managerial implications

The study has significant implications for the literature on sustainability in family business by identifying the issues that have been investigated so far, their contributions, and key findings. It thus provides the literature mapping that informs the scientific community on the main issues discussed, findings, uncertainties, and future agenda.

The study also has significant managerial implications. In Table 4, we present the main managerial implication for each cluster.

Conclusion, contributions, and research agenda

Sustainability should be an important issue for every family business stakeholder considering the emphasis of these organizations on trans-generational control intentions (Mahto et al., 2020). However, the issue failed to capture the attention of family business scholars until 2010, when four articles were published. In the seven years prior to 2010, an average of 1.28 articles were published with no published articles in 2004 and 2005. More recently, family business scholars have jumped on the sustainability bandwagon, with almost 80% of articles on the issue published in the last five years (2015–2019). In just the last three years (2017–2019), almost 62% of all sustainability articles on family business were published, with almost a quarter (about 25%) of those published in the most recent year (2019). It seems that the *Sustainability* journal has taken the lead in publishing family business sustainability articles.

The scholarly awareness and impact of sustainability issues in the family business context has grown significantly since 2003. In terms of citation, not a single published family business article on sustainability received any citation in 2003. However, since 2008, when the citation count increased to 25, the citation count has increased every year. The growth in the citation count has been about 20% in the last one year (2019), about 48% in the last three years (2017–2019), and about 60% in the last five years (2015–2019). Articles published in *Entrepreneurship Theory & Practice* are responsible for almost 17% of all the citations with the next four entrepreneurship journals (*Family Business Review*, *Journal of Business Venturing*, *Journal of Small Business Management*, and *Journal of Family Business Strategy*) together accounting for 26% of the citations. This suggests that the mainstream entrepreneurship and family business journals have become more receptive to scholarly work on sustainability.

In terms of scholars with articles in our bibliometric analysis, Sharon

Table 4
Managerial Implication of Prevailing Theoretical Approaches.

Prevailing Theoretical Approaches	Managerial implications
Cluster 1: <i>Family Business Capital</i>	<ul style="list-style-type: none"> • Family capital as total family resources composed of human, social, and financial capital. • Family capital contributed significantly to the accomplishments and sustainability of the company. • Spouse suffers from work and family conflict, reflects a restriction that creates a physiological strain. • A spouse's commitment to new business ventures can further exacerbate that same relationship. • Market orientation could serve as a fruitful perspective with which to understand family business culture and identity better, as well as the impact of these family-based idiosyncrasies on business strategies and organizational outcomes. • The indicators of family adaptive capacity had more significant effects and greater effects on survival and growth than the characteristics of the business.
Cluster 2: <i>Family Business Strategy</i>	<ul style="list-style-type: none"> • Reducing family tension, living in a family of two or three generations, reallocating sleep time, and hiring temporary help during troubled periods increased financial performance. • The company's assets, the age of the company, personnel management, the weekly hours of the owner in the company, family employees, and hiring temporary help were positively associated with increased achievements for the company and the family. • There exists a moderating effect of family businesses on the link between innovation and high social benefits. • The next generation of companies grows more slowly because they tend to give up part of their growth instead of risking family control loss due to increased debt. • The visibility of the family in the company, the family's trans-generational sustainability intentions, and the company's capacity for family self-improvement, positively influence the importance of identity adjustment between family and company, and the family's concern for corporate reputation. • The importance of profitability and control goals follow a sequential logic in family businesses. • Companies are characterized by a healthy combination of tradition and innovation regarding products and processes. • Innovation and tradition are not opposites; on the contrary, combining the two was crucial to achieving and maintaining a sustainable competitive advantage.
Cluster 3: <i>Family Business Social Responsibility</i>	<ul style="list-style-type: none"> • The company's size is significantly related to the ability of family businesses to give and receive community support. • Socially-responsible business behavior can indeed contribute to the sustainability of family businesses. • Individuals with very positive attitudes towards their local communities are more likely to take leadership positions and make financial and technical contributions to the community. • Family involvement in business influences attitudes, subjective norms, and behavioral control perceived in a company. • Relations with future generations are related to the adoption of sustainable certification.
Cluster 4: <i>Family Business Succession</i>	<ul style="list-style-type: none"> • Family companies are less involved in real results management and exhibit more policies in managing results by competence. • Family businesses use results management activities strategically, avoiding those that inhibit the company's long-term value and select those

Table 4 (continued)

Prevailing Theoretical Approaches	Managerial implications
	<p>that help families maintain transgenerational control.</p> <ul style="list-style-type: none"> • To enable intra-family succession and safeguard the farm's long-term survival, farming families are increasingly forced to seek innovative and sustainable market-oriented strategies. • Understanding the factors behind the willingness of potential successors to take control of the family business is crucial to the continuity of the farm.

M. Danes is the most prolific scholar with five published articles (Danes et al., 2009; Fitzgerald et al., 2010; P.D. Olson et al., 2003; Stafford et al., 2013; Werberl and Danes, 2010). Her work is among the earliest to be published in the area in 2003. Further, two of Danes' articles (Danes et al., 2009; P.D. Olson et al., 2003) are among the top five cited articles in the area. Sharon's co-author, Kathryn Stafford, is the next most prolific author on the list with four published articles. She shares the distinction of co-authoring two of the top five cited articles with Danes. Finally, Isabelle Le Breton-Miller and Danny Miller are co-authors of two articles in our list and one of their articles (Le Breton-Miller and Miller, 2006) is the most cited article in the area.

The four clusters that emerged in the bibliometric analysis of published work on sustainability in family businesses represent a well-recognized classification. Even the literature in the family business strategy cluster seems more advanced than the rest of the three clusters; we believe there is a significant scope for advancing knowledge on sustainability-related issues in family businesses in each of the four clusters. Given that succession is a key threat for family business (Mahto and Khanin, 2015), there is an urgent need for more scholarly work on sustainability and succession in family business that informs the understanding of scholars and practitioners alike. Further, we believe there are many areas with the potential for future research that family business scholars should consider, including UNESCO's 17 SDGs (Table 5).

The list of potential areas for future research on sustainability in family businesses is not exhaustive. However, based on the bibliometric analysis findings of this study, it is clear that we need a significantly more scholarly effort on sustainability in family businesses to enhance our knowledge. The higher acceptability of scholarly work in this area by the mainstream family business, entrepreneurship, and management journals should further motivate scholars to pursue research on these issues. We also encourage non-business scholars to examine sustainability practices related to UNESCO's SDGs in family businesses.

This study makes several important contributions on sustainability in family businesses. Firstly, we present a systematic review of sustainability in family business through resource to bibliometric techniques. Our review aids in identifying not only what the literature says about family business sustainability, but also prepares the ground for a second wave of research by summarizing the key shortcomings in knowledge on this topic and setting out directions for future studies.

Secondly, our study challenges various prevailing theoretical/conceptual assumptions in research on family business sustainability and puts forward new theoretical/conceptual perspectives for shaping future research in this field. Thirdly, we define a roadmap for an informed research agenda proposing multiple, but clearly defined directions: the usage and development of an innovative theory to open new paths for future research and theoretical construction; a more sophisticated understanding of the concept and its applicability; approaching the shortcomings related to the content across different levels of analysis for sustainability in the context of family business.

In sum, our study provides a higher understanding of sustainability-related issues in family businesses and identifies potential gaps in the literature. In undertaking this study, we followed the recommended best practices and prior published studies.

Table 5
Future Research Agenda.

Clusters	Promising future lines of research
Cluster 1: <i>Family Business Capital</i>	The dominance of technology, especially digital technology, has changed or transformed sustainability issues in business around the world in business and daily life. Family business, being the dominant form of enterprise, is not immune to changes associated with digital technology diffusion. Thus, the role of digital technologies in sustainability-related issues in family businesses is ripe for additional research. To bring together several management theories in the investigation of family businesses, especially concerning the study of family business capital, which involves family capital in its multiple faces: human, social, and financial capital.
Cluster 2: <i>Family business strategy</i>	There is a growing stream of literature on business model innovation and sustainability. The ongoing disruption in the business environment due to the COVID-19 pandemic has further prompted managers and scholars to focus on business model innovation for competitive advantage. We believe business model innovation related to sustainability or sustainability-driven business models in family businesses is a rich area for future exploration. Family businesses are not a homogeneous entity. Therefore, it is essential that future investigations focus on supporting different types of family businesses and how these investigations can create strategies that allow professionals to fulfill their obligations, its goals of wealth creation, and social inclusion.
Cluster 3: <i>Family Business Social Responsibility</i>	Stakeholder management is a challenging issue for family businesses and attracts significant scholarly interests. However, adding sustainability issues to stakeholder management in family businesses may be of significant interest for scholars and practitioners in the field. Future investigations should also focus on the direct versus indirect reciprocity of family businesses. This reciprocity shapes the unique attributes of family businesses, such as intentions for transgenerational sustainability, the pursuit of non-economic goals, and strong interpersonal ties.
Cluster 4: <i>Family Business Succession</i>	Family businesses use results-based management activities strategically, avoiding those that inhibit the company's long-term value. These companies select strategies that help families maintain cross-generational control. Therefore, future investigations must focus on building strategies that increase family businesses' efficiency and build indicators that help them achieve their goals. Family businesses occasionally collaborate with other businesses to obtain complementary resources or necessary operational advantage expertise (Fernandez and Nieto, 2005; Gjergji et al., 2020). Sustainability issues may impact a family business's choice of collaborative partner or specific strategies and vice versa. However, research on these issues in family businesses is missing. We encourage family business scholars to explore these issues in future studies.

Despite the contributions identified, the study has limitations, highlighting the use of only two databases to collect the articles that were part of the study. Although the WoS database is presented as an international reference database, collecting articles from other databases and sources could provide further insights into family business sustainability. Even though the Web of Science is one of the largest sources of published articles, the possibility of missing publishing articles on the topic in other databases (e.g., Scopus, Google Scholar) cannot be ruled out. Any changes in our data due to exclusion or omission due to a single source may impact our findings. We ask future scholars to utilize multiple data sources for their bibliometric studies.

CRedit authorship contribution statement

João J. Ferreira: Conceptualization, Data curation, Formal analysis, Writing – original draft, Writing – review & editing. **Cristina I. Fernandes:** Conceptualization, Data curation, Formal analysis, Writing – original draft, Writing – review & editing. **Francesco Schiavone:** Conceptualization, Data curation, Formal analysis, Writing – original draft, Writing – review & editing. **Raj V. Mahto:** Conceptualization, Data curation, Formal analysis, Writing – original draft, Writing – review & editing.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.techfore.2021.121077](https://doi.org/10.1016/j.techfore.2021.121077).

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